

ADOLESCENT SEXUAL HEALTH

Reaching homeless youths for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* screening in Denver, Colorado

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Background and rationale: The availability of urine based testing for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) provides a unique opportunity to screen for these pathogens outside traditional clinical settings. The researchers investigated the feasibility of street based CT/GC screening in the context of an outreach programme among street/homeless adolescents in Denver.

Objectives: To describe the integration of urine based CT/GC screening into an existing outreach programme among street/homeless youths and the yield of CT/GC testing in this setting.

Methods: The Denver Department of Public Health (DPH) collaborated with outreach staff from Urban Peak (a community based organisation serving street/homeless youths in Denver) to offer urine based CT/GC testing to males and females in street settings. Tests were conducted on the street in areas where street/homeless youths congregate.

Results: Urban Peak outreach staff were trained by DPH staff to conduct CT testing, process urine specimens, and provide test results to participating youths. DPH remained responsible for treatment of people with CT or GC infection as well as CT/GC case reporting. CT testing started in January 2000; GC testing was added in July 2000. Throughout April 2002 a total of 414 CT and 302 GC tests were conducted, respectively 11.6% and 2.7% of which were positive. Among first testers, 13.0% were positive for CT and 3.7% for GC.

Conclusions: CT/GC urine testing can be incorporated into existing outreach programmes without considerable extra effort. Overall CT rates were high and suggest the need for ongoing screening in this manner.

Learning objective: To understand the role of CT/GC screening in the context of services provided to street/homeless youths in outreach settings.

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In the United States, as many as 1.6 million youths are homeless each year.¹ In Denver, approximately 250 youths under the age of 21 are sleeping on the streets of Denver every night.² Homeless youths are characterised by high levels of substance abuse, mental illness, and physical and sexual abuse.^{3–6} There is also evidence that homeless youths are at high risk for sexually transmitted infections (STIs). A study of Los Angeles street youths found that 70% of youths sampled were sexually active with an average of 11.7 sexual partners during the last month.⁷ Bailey *et al*⁸ reported similar findings in their study of substance use and risky sexual behaviour among homeless and runaway youths, arguing for more targeted prevention among this population, especially among young homeless women. In a study among homeless youths in a large city in the northwestern United States, Noell *et al*⁹ found annualised chlamydia incidence rates of 7.4% among men and 12.1% among women. HSV-2 incidence rates were 11.7% and 25.4% respectively. Inconsistent condom use was the primary factor associated with incident STIs, especially among women with high numbers of partners.⁹

Though a recognised healthcare concern among the general population of adolescents, STIs are not typically addressed with homeless and runaway youths. The 1997 Institute of Medicine report on "The Hidden Epidemic" identified a need to design and implement essential STD related services in innovative ways for adolescents and underserved populations. The report recommended "innovative methods and alternate venues for intervention because these groups are difficult to reach through traditional health care settings."¹⁰ Based on several recent studies of STI rates among homeless and runaway youths, Kipke *et al*⁷ and Bailey *et al*⁸ concur with a need for

more effective interventions aimed at targeting this high risk population.

Because homeless and runaway youths are difficult to reach for STI services, the availability of non-invasive, urine based, testing for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) provides a unique opportunity for screening this population in an outreach setting. We investigated the feasibility of street based CT/GC screening in the context of an outreach programme among street/homeless adolescents in Denver. The objective of this study was to describe the collaboration between the Denver Department of Public Health (DPH) and Urban Peak, a community based organisation serving street/homeless youths in Denver, to introduce CT/GC testing into an existing outreach programme in this population as well as report on the yield of urine based CT/GC testing in this settings.

METHODS

In response to the growing number of youths living on the streets of Denver, Colorado, Urban Peak (UP) began serving this population in 1988, providing a continuum of support around employment and education, health care, drug and alcohol treatment, mental health treatment, and housing. Urban Peak is currently the only licensed homeless and runaway youth shelter in Colorado serving young people between the ages of 15 and 20. The ultimate goal of the agency is to assist youths in permanently exiting the streets.

The UP outreach team is on the streets 7 days a week in the greater Denver area, building relationships with homeless and runaway youths through services such as condom and bleach

Table 1 Characteristics of street/homeless youth testing for *Chlamydia* or gonorrhoea – Denver, Colorado 2000–2

	<i>Chlamydia</i> (CT)				Gonorrhoea (GC)			
	Male		Female		Male		Female	
	Tested	CT+	Tested	CT+	Tested	GC+	Tested	GC+
	No	No (%)	No	No (%)	No	No (%)	No	No (%)
All	186	23 (12.4)	129	18 (14.0)	135	4 (3.0)	82	4 (4.9)
Age (mean)	21.0	20.8	19.4	19.5	20.8	19.1	19.4	18.9
Race/ethnicity								
White	122	14 (11.5)	69	14 (20.3)	88	3 (3.4)	46	(0.0)
Hispanic	20	3 (15.0)	29	2 (6.9)	14	0 (0.0)	15	1 (6.7)
Black	20	2 (10.0)	8	1 (12.5)	16	0 (0.0)	7	2 (28.6)
Other	24	4 (16.7)	23	1 (4.3)	17	1 (5.9)	14	1 (7.1)
Sex partners (past 3 months)								
≤1	100	7 (7.0)	54	6 (11.1)	73	2 (2.7)	39	1 (2.6)
>1	86	16 (18.6)	75	12 (16.0)	62	2 (3.2)	43	3 (7.0)

kit distribution, the provision of hygiene products and snacks, and offering a variety of referrals. As of June 2000, the UP outreach team had over 2000 (duplicated) contacts with youths on the streets in Denver's inner city. The team is supervised by an outreach coordinator and, further, includes one peer youth worker and two full time counsellors.

INTEGRATION OF URINE CHLAMYDIA AND GONORRHEA SCREENING INTO UP OUTREACH TEAM ACTIVITIES

Initially, the UP outreach team was accompanied by DPH staff on the streets once a week to offer urine based testing for CT to the youths encountered during outreach activities. Subsequently, UP outreach team members were trained in providing urine screening services themselves, collecting data, shipping samples to DPH for laboratory testing, and contacting youths for results. DPH remained responsible for treatment of people with CT or GC infection and reporting CT and GC cases to the Colorado Department of Public Health and Environment. (both are reportable infections in the state of Colorado). During an outreach session, the UP outreach team counsellors introduced DPH staff to the youths as a means of validating their presence on the streets. Youths then accessed the outreach counsellor for services or engaged DPH staff to obtain a CT/GC test. The collaboration took place every Wednesday afternoon from 2 pm until 4 pm for a period of approximately 3 months. The urine based tests were offered at a park that is a popular congregating location for homeless and runaway youths in Denver. The afternoon is the time of the day when the highest numbers of youths are at the park.

Youths choosing to test for CT/GC sat with the tester in a portion of the park with the least amount of distraction and the greatest degree of privacy and completed a brief test form taking approximately 5–10 minutes. Upon completing the form, they received a specimen cup and left the park to find a public toilet (for example, at a fast food restaurant or shopping pavilion). After returning the urine sample, youths received a card with the contact number for DPH to call for their test results. Youths were also informed that they could use the UP outreach team cell phone to check for their results at a later date. Public health officials from DPH administered all CT/GC laboratory testing, test results, and treatment. Youths testing positive for CT/GC could either go to the STI clinic at DPH for treatment or arrangements would be made for a DPH staff member to meet them at the park. The UP outreach team also assisted in arranging transportation via bus tokens or the Urban Peak van should a client need to go to the STI clinic.

RESULTS

Initially, CT testing was only available once a week during the collaborative outreach between DPH and Urban Peak. During these sessions, every youth encountered during that session (approximately 40 youths per session) was offered a CT/GC test. After June 2000, every full time outreach counsellor from Urban Peak was trained to administer the test. At this time, the test was available and offered during every outreach session, 7 days a week.

Between January 2000 and April 2002, 414 CT and 302 GC tests were performed, of which 11.6% and 2.6% were positive. Of those tested, respectively 315 and 217 tested for the first time; among these 41 (13.0%) tested positive for CT and eight (3.7%) tested positive for GC. Demographic and behavioural characteristics of those tested for the first time are provided in table 1. Overall we did not find significant associations between testing positive for CT or GC and sex, age, or race/ethnicity. Youth who reported more than one sex partner in the previous three months were more likely to be diagnosed with both CT or GC, but this difference was only statistically significant for CT among males. Restricting testing to those youths who reported more than one sex partner, however, would have missed 13/41 (31.7%) CT cases and 3/8 (37.5%) GC cases.

Treatment was documented for 30 of 49 (61.2%) CT/GC infections.

No formal assessment was made of the proportion of youths encountered during outreach who were offered or who accepted CT/GC testing. Because of the transient nature of this population and the high volume of youths receiving outreach services during each session (approximately 50 youths), any formal and accurate assessment on refusal rates is difficult to make during street encounters. Observations during two full outreach sessions, however, suggested that of people encountered, approximately 70% were offered urine testing, and that of those, 20% accepted the test. Reasons for the UP outreach team counsellor not offering the test included the client being under the influence of alcohol or incoherent. During two additional outreach sessions, a brief survey was conducted to study reasons for not accepting the test. Of 10 refusers, two indicated they had never had sex, one said he was not currently sexually active, two refused because they had tested within the last 2 months, and five were not interested in receiving the test at that time.

DISCUSSION

The inclusion of urine based testing for CT and GC as part of outreach services provided to high risk, street/homeless

youths in Denver, was shown to be a mutually beneficial collaboration between a community based agency and a public health department. For Urban Peak, the added service was yet another tool to assist the outreach counsellor in building relationships with youths on the streets. It was estimated that less than 5% of the counsellors' time was spent distributing this urine based test; therefore the benefits of providing this service far outweighed the cost in time and resources it required of the UP outreach team to distribute the test. For Denver Public Health, the collaboration identified a means to effectively screen for CT/GC on the streets among a hard to reach high risk population without overextending its own human resources. Rather than being available to the youths on the streets once a week (as was the case initially), the test is now available to the youths 7 days a week in multiple locations throughout the Denver metropolitan area. Still, the greatest benefit of the collaboration was received by the youths themselves. Through the outreach effort, high prevalence rates for CT and to a lesser extent for GC were demonstrated, strongly supporting the need for ongoing screening in this population.

While successful overall, a number of problem areas were also identified. Firstly, acceptance rates appeared to be low, potentially decreasing the cost effectiveness of this approach. However, because CT/GC testing is available via the UP outreach team during every session, 7 days a week, youths have multiple opportunities to test during any given week; consequently, while the majority of youths refuse the test during a given outreach session, over a period of time many of these youths take advantage of the opportunity to test as their relationship with the UP outreach team develops. From observations and outreach reports, the UP outreach team estimates that they serve a population of approximately 1200 homeless youths. If it is accepted that 20% of these youths have not been sexually active, the population at risk for STD can be estimated at approximately 1000. Thus, with 315 unduplicated tests performed during the 2 years of the project, we estimate that approximately 30% of this population was reached.

Secondly, for almost 40% of diagnosed CT/GC infections, treatment was not documented. While this rate is not unexpected in such a transient population, it does reduce the overall utility of the screening programme. Extra effort must therefore be devoted to enhance the return rates for results and treatment—for example, by educating youths about the importance of receiving results and treatment when they are tested and to provide the counsellor with adequate contact information, including cell phone numbers and email addresses.

In summary, offering urine based testing for CT/GC to street/homeless youths in Denver was shown to be a successful collaboration between a health department and a local community based organisation. The high CT and GC prevalence rates in this population demonstrated through this collaboration warrants continuation and expansion of these services.

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